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Estimating demographic bias on tests of children's early vocabulary

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Abstract

Children's early language skill has been linked to later educational outcomes, making it important to measure early language accurately. Parent-reported instruments such as the Communicative Development Inventories (CDIs) have been shown to provide reliable and valid measures of children's aggregate early language skill. However, CDIs contain hundreds of vocabulary items, some of which may not be heard (and thus learned) equally often by children of varying backgrounds. This study used a database of American English CDIs to identify words demonstrating strong bias for particular demographic groups of children, on dimensions of sex (male vs. female), race (white vs. non-white), and maternal education (high vs. low). For each dimension, we identified dozens of strongly biased items, and showed that eliminating even some of these items can reduce the magnitude of differences between groups. Additionally, we investigated how well the relative frequency of words spoken to young girls vs. boys predicted sex-based word learning bias, and discuss possible sources of demographic differences in early word learning.